

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
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Amendment of the Commission's Rules with)	GN Docket No. 12-354
Regard to Commercial Operations in the)	
3550 – 3650 MHz Band)	
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To the Commission:

**Comments of Nickolaus E. Leggett, N3NL
Amateur Radio Extra Class Operator, Inventor, and Analyst**

I am a certified electronics technician (ISCET and iNARTE) and an Extra Class amateur radio operator (call sign N3NL). I hold an FCC General Radiotelephone Operator License with a Ship Radar Endorsement. I am an inventor holding three U.S. Patents. My latest patent is a wireless bus for digital devices and computers (U.S. Patent # 6,771,935). I have a Master of Arts degree in Political Science from the Johns Hopkins University.

I am one of the original petitioners for the establishment of the Low Power FM (LPFM) radio broadcasting service (RM-9208 July 7, 1997 subsequently included in MM Docket 99-25). I am also one of the petitioners in the docket to establish a low power radio service on the AM broadcast band (RM-11287). I have filed a total of over 200 formal comments with the FCC over the years since the 1970s. I have filed comments with other Federal agencies as well including the USPTO, FAA, EPA, and the TSA.

My Comments

The concept of a new Citizens Broadband Service is an excellent idea that could help many individuals and small companies to contribute to the economy of the United States. My comments suggest specific steps and strategies that will encourage participation by individual citizens and small companies while preventing domination of the frequency band by large corporations.

Operational Opportunities

The opportunities of specific types of users should be guaranteed by granting specific rights to those users as specified here:

1. Each individual shall have the right to establish a small cell network in the residential property that he or she owns or rents. This includes apartments, condominiums, town houses, and single family houses (and their plots of land).
2. Each person who owns a farm or ranch or other property shall have the right to have a small cell network that covers his property.
3. A landlord should have the right to cover his property with a small cell network but his network must not block any networks operated by his tenants.
4. Similarly to Item 4, a condominium association should have the right to have a small cell network covering the condominium's property but this network may not block any networks operated by the condominium unit owners.
5. A town should have the right to set up a network of small cells covering the territory of the town but this network may not block any other networks set up within that town.

6. Private companies and corporations should have the right to set up multi-cell networks but these networks may not displace or block any network set up as described in Items 1 through 5 above.
7. Conflicts between networks will be processed by a mediation system set up using governmental funds or perhaps user fees.
8. Small cell networks can be interconnected at will by the mutual agreement of the owners of the networks. The Commission shall not be allowed to regulate such voluntary interconnections.

Additional Rights

Individuals and small companies must have the right to participate in the invention, development and deployment of technology for the small cell networks.

- Inventors shall be allowed to invent new technologies for the small cell networks and to test such technologies on their own small cell networks. Prototype devices must meet the existing technical standards for use in small cell networks.

The Commission should actively work to assist the inventors in meeting the technical standards. Both hardware and software inventions are covered by this right.

- Small companies shall have the same rights as those of the inventors listed above.
- Large companies will be governed by the existing rules for certifying (type approval) of new technology for the networks.

I expect that amateur radio operators will first experiment with new technologies on the 3300 to 3500 MHz amateur radio allocation and then they will be interested in applying these new technologies to commercial service in the 3550 to 3650 MHz band. The Commission

should positively and actively support these developments' migration from amateur radio to commercial service.

Respectfully submitted,

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December 21, 2012

Appendix A – My Patents and Document References

Some of my document references are listed below:

United States Patent 6,771,935, Wireless Bus August 3, 2004

United States Patent 3,280,929 Ground-Effect Machine October 25, 1966

United States Patent 3,280,930 Ground-Effect Vehicle October 25, 1966

“Demonstration and Development of Amateur Radio Applications of Natural Vacuum Electronics”; Nickolaus E. Leggett, N3NL - 22nd AMSAT Space Symposium and Annual Meeting October 8-10, 2004 in Arlington, Virginia

“A ‘Lighthouse’ Protocol for Random Microwave Contacts”, Nickolaus E. Leggett, N3NL, QEX The Experimenter’s Exchange – Technical Notes July/August 2004 – American Radio Relay League, Newington, CT.

Wireless bus invention – U.S. Patent # **6,771,935**

Abstract

In order to avoid mechanical assembly problems and transmission of undesired electrical currents among circuit cards or boards in a telecommunications switch or similar digital device, a conventional hard-wired midplane bus is replaced by a wireless bus. The wireless bus includes a radio frequency or light wave transceiver on each card. Antennas on respective cards can either be oriented within direct line-of-sight of each other, or can project into a waveguide which directs the transmitted signals past all the other antennas. For example, the waveguide may be a metal enclosure which surrounds all the cards. Alternatively, respective aligned apertures in the cards can define a continuous transmission path. A data rate exceeding 1 megabit per second and a transmission power on the order of 1 milliWatt are preferred, since the bus is intended for use

within a single switch housing. Radio frequencies in the middle to high microwave range or light frequencies in the visible range are preferred for providing sufficient bandwidth and to facilitate servicing.